HYDROLOGICAL SCIENCES

JOURNAL

DES SCIENCES HYDROLOGIQUES

HYDROLOGICAL SCIENCES

JOURNAL

DES SCIENCES HYDROLOGIQUES

Formerly Hydrological Sciences Bulletin

Editor Robin T. Clarke
Institute of Hydrology, Wallingford, Oxon.
OX10 8BB, UK

Volume 28

Published for the
International Association of
Hydrological Sciences
Association Internationale des
Sciences Hydrologiques
by Blackwell Scientific Publications
1983

© 1983 Blackwell Scientific Publications.
Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by Blackwell Scientific Publications for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the base fee of $02.00 per copy is paid directly to CCC, 21 Congress Street, Salem, MA 01970, USA.
0262-6667/83 $02.00.

Volume 28, Number 1, March 1983

CONTENTS

1 *Editorial*

Jubilee Lectures presented at the IAHS Exeter Assembly, July 1982

3 MARK F. MEIER: Snow and ice in a changing hydrological world

23 J. C. I. DOOGE: On the study of water

49 A. VOLKER: International cooperation in hydrology and water resources development

57 G. N. GOLUBEV: Economic activity, water resources and the environment: a challenge for hydrology

Commission Lectures presented at the IAHS Exeter Assembly, July 1982

77 URI SHAMIR: Experiences in multiobjective planning and management of water resources systems

93 WERNER STUMM: Assessing the environmental behaviour of aquatic pollutants

103 Ö. STAROSOLSZKY: Trends in the development of hydrometry

125 ISAMU KAYANE: Some problems relating to groundwater balance

139 MICHAEL M. HERRON & SUSAN L. HERRON: Past atmospheric environments revealed by polar ice core studies

Scientific papers

155 M. FUGAZZA, M. GALLATI, U. MOISELLO & L. NATALE: Integration of surface water with groundwater resources aided by numerical modelling

169 E. H. MOREL & A. B. BIRTLES: Optimization of groundwater abstraction from a coastal aquifer

Announcement

183 International Symposium on Challenges in African Hydrology and water resources

News

184 Presentation of the International Hydrology Prize for 1982 to Mr Walter Langbein and Dr V. I. Korzun

188 Workshop on Strategies of Hydrological Sciences in Developing Countries

189 International Symposium on Hydrometeorology

190 International Symposium on the Impact of Agricultural Activities on Groundwater

Book reviews

191 "Principles of Forest Hydrology" by John D. Hewlett

192 "Stable Isotope Hydrology: Deuterium and Oxygen-18 in the Water Cycle" edited by J. R. Gat & R. Gonfiantini

194 "Surface Water Resources of South Africa" vols I–VI, from the Hydrological Research Unit, University of the Witwatersrand, Johannesburg

196 *Publications received by the Editor*

198 *Errata*
to the paper by Chen Rihua published in "Advances in Hydrometry": IAHS Publ. no. 134

199 *Diary of forthcoming events*

Volume 28, Number 2, June 1983

CONTENTS

Scientific Papers

209 V. U. NGUYEN & A. J. RAUDKIVI: Analytical solution for transient two–dimensional unconfined groundwater flow

221 MARIA MIMIKOU: Daily precipitation occurrences modelling with Markov chain of seasonal order

233 ÜNAL SORMAN & GÜVEN BALKAN: An application of network design procedures for redesigning Kizilirmak River basin raingauge network, Turkey

247 GYÖRGY KOVÁCS & LÁSZLÓ UJFALUDI: Movement of fine grains in the vicinity of well screens

261 S. K. GUPTA: An isotopic investigation of a near-surface groundwater system

273 ERIC C. BARRETT: Organizational needs for hydrological applications of satellite remote sensing in developing countries

283 E. ROOSE, F. LELONG & J. COLOMBANI: Influence du bioclimat et de l'aménagement des sols sur les éléments du bilan hydrique en Afrique de l'Ouest

Technical Note

311 RIADH H. AL-DABBAGH & MAHA A. S. AL-DABBAGH: The regional effects of the effluents from the Mishraq sulphur mines in Iraq on the hydrological system

News

319 International Conference on Soil Erosion and Conservation (Malama Aina '83)

320 Hydrological Aspects of Water Supply and Waste Water Disposal in Coastal Urban Areas and Tourist Sites in the Mediterranean Area

321 IGCP Project 200 (1983–1987): Sea Level Correlations and Applications

322 Postgraduate International Hydrology Courses at Brussels

Obituary

323 Jacob Otnes

Book reviews

324 "Gravel-Bed Rivers" edited by R. D. Hey, J. C. Bathurst & C. R. Thorne

325 "Severn Barrage" (Proceedings of a Symposium organized by ICE)

326 "Environmental Isotopes in the Hydrosphere" by V. I. Ferronsky & V. A. Polyakov

327 "Geomorphological Field Manual" by V. Gardiner & R. Dackombe

328 "Artificial Groundwater Recharge" by L. Huisman & T. N. Olsthoorn

329 "Land Erosion by Water in Different Climates" by Margareta B. Jansson

330 *Publications received by the Editor*

333 *Diary of forthcoming events*

Volume 28, Number 3, September 1983

CONTENTS

Scientific Papers

341 PIERRE BRUNEAU & JEAN-CLAUDE RASSAM: Application d'un modèle bayesien de détection de changements de moyennes dans une série

355 P. A. CARLING: Particulate dynamics, dissolved and total load, in two small basins, northern Pennines, UK

377 J. O. ADEJUWON, L. K. JEJE & O. O. OGUNKOYA: Hydrological response patterns of some third order streams on the Basement Complex of southwestern Nigeria

391 JAMES C. I. DOOGE, ZBIGNIEW W. KUNDZEWICZ & JAROSLAW J. NAPIÓRKOWSKI: On backwater effects in linear diffusion flood routing

403 SIEGFRIED MEIER: Portrait of an Antarctic outlet glacier

417 K. D. SHARMA, H. P. SINGH & O. P. PAREEK: Rainwater infiltration into a bare loamy sand

Obituaries

425 Léon Jean Tison (1895–1982)

427 Walter B. Langbein (1907–1982)

Letters to the Editor

On "Transient two-dimensional groundwater flow" by V. U. Nguyen & A. J. Raudkivi

430 Letter from P. Sharma

435 Reply from A. J. Raudkivi

436 Letter from P. J. Sinclair

440 Reply from A. J. Raudkivi

Book reviews

441 "Rivers, Form and Process in Alluvial Channels" by Keith Richards

442 "Water Resources Management in Industrial Areas" edited by Leo R. Beard & W. H. C. Maxwell

443 "Water for Human Consumption" (selected papers prepared for the IVth World Congress of the International Water Resources Association)

444 *Publications received by the Editor*

446 *Diary of forthcoming events*

Volume 28, Number 4, December 1983

CONTENTS

Scientific Papers

455 A. W. JAYAWARDENA & P. H. LUI: A time-dependent dispersion model based on Lagrangian correlation

475 P. H. LUI & A. W. JAYAWARDENA: Application of a time-dependent dispersion model for dispersion prediction in natural streams

485 A. H. M. GÖRGENS: Reliability of calibration of a monthly rainfall-runoff model: the semiarid case

499 A. K. BAGCHI: Areal value of degree-day factor

513 OGNJEN BONACCI: Several methods for discharge measurements of floods

525 R. N. ATHAVALE, RAMESH CHAND & R. RANGARAJAN: Groundwater recharge estimates for two basins in the Deccan Trap basalt formation

539 NICHOLAS K. GIDAS & TRYFON CONSTANTINOU: Non-dimensional numbers associated with the evaporation from a capillary porous medium

Announcement

551 International Symposium on Karst Water Resources

News

Reports on IAHS meetings at the IUGG General Assembly at Hamburg, August 1983

552 Symposium on Dissolved Loads of Rivers and Surface Water Quantity/Quality Relationships

555 Symposium on Coastal and Near Shore Zone Processes: Chemical Processes

556 Symposium on Sea Ice Margins

557 Symposium on the Assessment of Natural Hazards

558 Symposium on Geophysics of the Polar Regions

559 Workshop on Strategies for Hydrological Sciences in Developing Countries

561 Symposium on Scientific Procedures Applied to the Planning, Design, and Management of Water Resources Systems and Workshop on the Role of Hydrology in Water Resources Systems: Experiences and Perspectives for the Future

564 Symposium on Relationship between Groundwater Quality and Quantity

566 Workshop on Water Resources Assessment as a Contribution to the International Drinking Water Supply and Sanitation Decade (part of the Workshop on the Role of Hydrology in Water Resources Systems: Experiences and Perspectives for the Future)

568 Workshop on Large-Scale Snow Studies

570 Presentation of the International Hydrology Prize for 1983 to Professor Jim Dooge

Book reviews

572 "Scientific Basis of Water-Resource Management" from US National Academy of Sciences

573 "River Basin Development", editor in chief Munir Zaman

574 *Publications received by the Editor*

577 *Diary of forthcoming events*

587 *Author index*